REMARKS

Claims 1-8, 13-18, 23-28 and 33-36, all the claims pending in the application, stand rejected. Claims 1, 14 and 23 are amended. Claim 5 is cancelled. Applicants respectfully submit that with these amendments, the application now is in condition for allowance.

Claim Rejections - 35 U.S.C. § 102

Claims 1-3, 6-8 and 13 are rejected under 35 USC 102(b) as being anticipated by Dubetsky 4,259,061). This rejection is traversed for at least the following reasons.

First, Applicants note that claim 1 has amended to incorporate the limitations of claim5, which has been cancelled. The subject matter of claim 5 is that said metal has a shape of plate and, in surface state of the plate as a base plate, a surface roughness thereof is such that Ra is 20 μ□ or less and Rmax is 150 μ□ or less.

Claim 1 has an object to provide a refractory metal plate which is capable of preventing from melting-adhering or fusing of MIM product upon sintering thereof to a surface of the refractory metal plate which is, by reducing a thickness of a plate thereof, capable of largely saving energy and time used for heating and cooling so that an economical effect is large.

Claim 1 has a specific structure in that the exposure of a base material is equal to or less than 1% of a unit area of the oxide coating layer. Namely, an exposure rate of the base material under the oxide coating layer is reduced to one percent or less. In addition, the metal has a shape of plate. As to the surface state of the plate as a base plate, a surface roughness thereof is such that Ra is 20 μm or less and Rmax is 150 μm or less.

The advantages of the structure are easily understood from the description mentioned on page 12, lines 13 to 20 of the specification. That is, since no reaction takes place between the base material and a processing object, the processing object can neither melt nor adhere to the base material. Accordingly, the resultant refractory metal plate can be manufactured without degrading the performance of the base material, i.e. molybdenum plate.

On the other hand, Dubetsky relates to forming multilayer ceramic substrate for semiconductor packages.

Dubetsky discloses that a thick layer has a surface finish of 5 u.m. CLA. The surface

finish of 5 u.m.(=μm) CLA by Dubetsky corresponds to a surface roughness, Ra of 5μm which overlaps a range of the surface roughness, Ra of 20 μm or less by the present invention. Herein, definitions of Ra and Rmax are well known and are described in numerous international standards, such as Japanese Industrial Standards (JIS) B0601-1982.

However, Dubetsky neither suggests nor teaches that (1) the exposure of a base material should be equal to or less than 1% of a unit area of the oxide coating layer, and (2) a surface roughness thereof is such that Rmax is 150 μm or less. As to the first limitation, the Examiner asserts that the feature would be inherent in Dubetsky. Applicant disagrees as the law of inherency requires that the feature would necessarily flow from the disclosure and that there are no alternatives. There clearly are many other alternatives, thus precluding anticipation of the claim. With respect to obviousness, that can be debated, but the combination of limitations (1) and (2) is clearly not taught nor obvious from Dubetsky.

Accordingly, claim 1 is patentably different from Dubetsky, in object, and a structure of an oxide coating layer are not taught from Dubetsky.

In addition, Claims 2, 3, 6-8, and 13, which depend from twice amended claim 1 should be patentable.

Further, as to claim 2, Applicants note that the Examiner has not addressed the feature that the specific structure of claim 1 can be obtained under conditions described in claim 2. Specially, the claim states that -- at least one kind of said oxide powders is set to 10 μm or less-- and --a heat treatment is carried out at a temperature depending on the grain size of said powder—. The advantages according to the structure of claim 2 may be understood from the Embodiments in Tables 2 and 4, of the specification. Table 2 shows that reference samples Nos. 15, 16, and 21 have grain sizes of 30μm larger than samples Nos. 1 to 12 of the present invention, so that a coating layer may be ready to peel, products may be ready to be welded, and warping may easily take place. On the other hand, Dubetsky is silent about reducing exposure rate. Therefore, Claim 2 is not taught by Dubetsky.

Claim Rejections - 35 U103

Claims 4 and 5 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dubetsky (4,259,061). This rejection is traversed for at least the following reasons.

First, as to claim 5, this rejection is moot in view of the cancellation of the claim.

With regard to claim 4, the claim is patentable due to its dependence on patentable claim 1. Moreover, neither this claim nor its parent would be obvious because nothing in Dubetsky teaches or suggests the limitations added to claim 1.

Claims 14-18 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dubetsky (4,259,061). This rejection is traversed for at least the following reasons.

Applicant has amended independent claim 14 to add the limitation added to claim 1. As already noted, nothing in Dubetsky teaches or suggests that the exposure of a base material should be equal to or less than 1% of a unit area of the oxide coating layer, and a surface roughness thereof is such that Rmax is 150 μ□ or less. Claims 15 to 18, which depend from amended claim 14, are not taught from Dubetsky, either.

Claims 23-28 and 33-36 are rejected under 35 U.S.C. § 103(a) as being unpatentable over Dubetsky (4,259,061) in view of JP 63-157832 (Takabe et al). This rejection is traversed for at least the following reasons.

Claim 23 has been amended to add a structural limitation similar to that added to amended claims 1 and 14. Advantages similar to those described in conjunction with amended claim 1 would also be obtained.

On the other hand, Dubetsky neither suggests nor teaches that the exposure of a base material should be equal to or less than 1% of a unit area of the oxide coating layer, and a surface roughness thereof is such that Rmax is 150 μ□ or less, as already described. Takabe et al does not remedy this deficiency.

Although Takebe et al teach a molybdenum plate containing lanthanum or lanthanum oxide of 0.1 to 1.0wt%, Takebe et al does not teach that the molybdenum plate has an oxide coating layer formed on the surface of the plate. Moreover, Takabe et al clearly does not teach

or suggest reducing the structure that the exposure of a base material that is equal to or less than 1% of a unit area of the oxide coating layer.

Accordingly, amended claim 23 is not taught by Dubetsky and Takebe, either alone or the combination thereof.

In addition, Claims 24 to 28, which depend from amended claim 23, similarly are not taught from Dubetsky and Takabe et al.

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

Respectfully submitted,

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